

**Abstract:**

The present invention provides a thermosensitive and biodegradable microgel and a method of synthesizing such microgels. The thermosensitive and biodegradable microgel is synthesized from a macromer comprising a thermosensitive block polymer co-polymerized with a biodegradable moiety encapped with a cross-linkable or polymerizable moiety at either end. The microgels of the present invention are synthesized by inverse suspension polymerization of the macromers. The microgels are biodegradable into components that are non-toxic and easily removed from the body. The microgel of the present invention is temperature sensitive and is "intelligent" as well as biodegradable. The microgels are preferably used for the controlled release of a drug or in tissue engineering. Most preferably, the microgels are suitable for the control release of biologically active substances such as proteins.